UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 09/967,030 | 09/27/2001 | Randy H. Ziegler | 25863.00120 | 4807 |

28983 7590 08/07/2003

REED SMITH CROSBY HEAFEY LLP
1901 AVENUE OF THE STARS, SUITE 700
LOS ANGELES, CA 90067

| EXAMINER | |
|---|---|
| PATTEN, PATRICIA A | |
| **ART UNIT** | **PAPER NUMBER** |
| 1654 | 12 |

DATE MAILED: 08/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/967,030 | ZIEGLER, RANDY H. | |
| | Examiner | Art Unit | |
| | Patricia A Patten | 1654 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *22 May 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *8-10 and 18-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *8-10 and 18-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

## DETAILED ACTION

Claims 8-10 and 18-22 are pending in the application.

### *Election/Restrictions*

Applicant's election of the species of Luteolin in Paper No. 11 is acknowledged.

Applicant contends that claim 10 is not a generic claim. The Applicant is correct, this was a typographical error. Claims 8 and 19 and 20 are generic. All claims will be examined on the merits for the elected species, and all dependant claims which include this species will also be examined (there are no dependant claims which specifically state a non-elected species alone).

Claims 8-10 and 18-22 have been presented for examination on the merits.

### *Claim Rejections - 35 USC § 103*

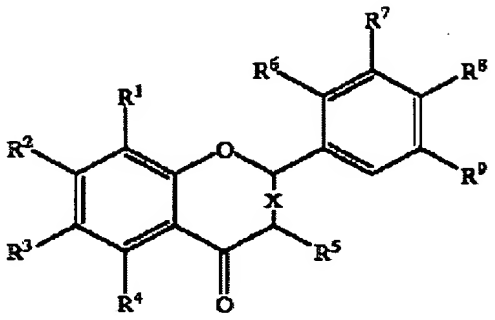
The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 8-10 and 18-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bok et al. (US 6,096,364A). Claims 8-10 and 18-22 are drawn to a method for treating diabetes with luteolin. Claims are further drawn to wherein the luteolin is administered with other flavonoids such as dihydrokaempferol, apigenin and quercetin.

Bok et al. (US 6,096,364 A) taught that bioflavonoids of the following structure were useful for lowering blood glucose levels:



wherein

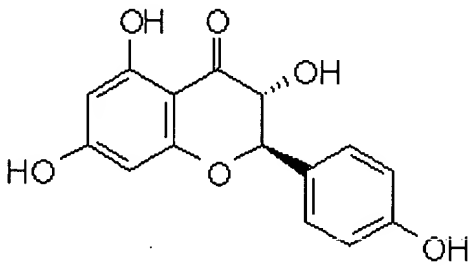
$R^1$ $R^2$, $R^3$, $R^4$, $R^5$, $R^6$, $R^7$, $R^8$ and $R^9$ are each independently hydrogen; a hydroxy group; a $C_{1-9}$ alkoxy group optionally substituted with one or more substituents selected from the group consisting of a hydroxy, $C_{1-5}$ alkoxy, aryloxy, and phenyl group substituted with 1 to 3 substituents selected from the group consisting of a hydroxy, alkoxy, aryloxy, halogen, nitro and amido group; a $C_{3-9}$ cycloalkyloxy group substituted with 1 to 3 substituents selected from the group consisting of a hydroxy, alkoxy, aryloxy, halogen, nitro and amido group; a $C_{5-9}$ cycloalkylcarbonyloxy group substituted with 1 to 3 substituents selected from the group consisting of a hydroxy, alkoxy, aryloxy, halogen, nitro and amido group; a $C_{2-10}$ or $C_{16-18}$ acyloxy group optionally substituted with one or more substituents selected from the group consisting of a hydroxy, $C_{1-5}$ alkoxy, aryloxy, and phenyl group substituted with 1 to 3 substituents selected from the group consisting of a hydroxy, alkoxy, aryloxy, halogen, nitro group; a rutinosyl group; or a rhaminosyl group; and

X is a single or double bond.

(col.2)

Bok et al. specifically mentioned that the preferred species of flavonoids were: wherein $R^1$ is H, $R^2$ is OH, a rutinosyl or rhaminosyl; $R^3$ is H; $R^4$ is OH; $R^5$ is H, OH or a rutinosyl group; $R^6$ is H; $R^7$ is H or OH; $R^8$ is OH or $OCH_3$ and $R^9$ is H (col.2, lines 58-62). Table II specifically teaches that luteolin, quercetin, apigenin and kaempferol all fall within these parameters (col.3). Although Bok et al. did not specifically teach that

dihydrokaempferol fulfilled these parameters, it is clear that dihydrokaempferol indeed satisfies this requirement:




C00974 (taken from the www).

One of ordinary skill in the art would have been motivated to have administered all of the claimed flavonoids to a person suffering from diabetes because Bok et al. taught that bioflavonoids (flavonoids) which meet the above criteria would promote the lowering of blood glucose levels. Because all of the claimed flavonoids meet the criteria set out by Bok et al., the ordinary artisan would have had a good expectation that each flavonoid would have individually performed successfully with regard to blood glucose lowering (treatment of diabetes).

Although Bok et al. did not specifically teach the claimed combination of flavonoids (i.e., luteolin, dihydrokaempferol, apigenin and quercetin), it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to combine the instant ingredients for their known benefit since each was well known in the art for lowering blood glucose levels. This rejection is based on the well established

proposition of patent law that no invention resides in combining old ingredients of known properties where the results obtained thereby are no more than the additive effect of the ingredients, *In re Sussman,* 1943 C.D. 518. Applicants invention is predicated on an unexpected result, which typically involves synergism, an unpredictable phenomenon, highly dependent upon specific proportions and/or amounts of particular ingredients. Any mixture of the components embraced by the claims which does not exhibit an unexpected result (e.g., synergism) is therefore *obvious.*

Although Bok did not specifically teach the claimed ratios of luteolin to dihydrokaempferol (i.e., claim 22), the ordinary artisan would have been motivated to have varied the amounts administered according to age and weight. Varying quantities of known pharmaceutical ingredients was considered optimization of result effective variables; common, routine practice in the art of pharmacology.

No Claims are allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Patricia Patten, whose telephone number is (703)308-1189. The examiner can normally be reached on M-F from 9am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brenda Brumback, can be reached on (703) 306-3220. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306. The official After final fax phone number is (703) 872-9307.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.

CHRISTOPHER R. TATE
PRIMARY EXAMINER